

REMARKS

Claims 1, 3, 21 and 26-29 have been amended to further particularly point out and distinctly claim subject matter regarded as the invention. The text of claims 2, 4-20 and 22-25 is unchanged, but their meaning is changed because they depend from amended claims.

Claims 30-34 have been added which further particularly point out and distinctly claim subject matter regarded as the invention.

The Abstract has been amended in light of the objections made by the Office Action. No new matter in either the abstract or the claims has been added.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "Version with Markings to Show Changes Made".

The First 35 U.S.C. § 103 Rejection

Claims 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 26 and 28 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Holt¹, among which claims 1, 21 26 are independent claims. This rejection is respectfully traversed.

¹ U.S. Patent 6,070,192

Claims 4, 8, 12, 16, 20, 24, 25 and 29 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Holt in view of Inoue et al.². This rejection is respectfully traversed.

Claims 2, 6, 10, 14, 18, 22 and 27 are rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Holt in view of Inoue et al. In view of Reid³. This rejection is respectfully traversed.

According to the Manual of Patent Examining Procedure (M.P.E.P.),

To establish a prima facie case of obviousness, three basic criteria must be met. First there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in the applicant's disclosure.⁴

Specifically with regard to claim 1, the Office Action contends that the elements of the presently claimed invention are disclosed in Holt et al., except that Holt does not teach that the NAS also comprises memory locations associated with each other to store an identifier and an IP address of a user. The Office Action further contends that Official Notice "is taken that both the concept and advantages of providing for memory locations of a network access server associated with one other to store an identifier and an IP address of users that are connected is well known and expected in the art." The Office Action alleges that "it would have been obvious to one of ordinary skill in the art to include memory locations to store an identifier and an associated IP address to the system of Holt because it would allow network access server to efficiently keep track of which users are presently connected to the network via the server."

² U.S. Patent 6,442,616

³ U.S. Patent 6,233,616

⁴ M.P.E.P § 2143.

Holt describes a system for efficiently reducing Public Switched Telephone Network Congestion when using a computer network. The elements of the system are depicted in FIG. 2, but the key components are the Network Access Server (NAS), Network Controller (NC), and Network Gateway (NG). The Office Action alleges that Holt describes "an authenticator for asking the HGS for an IP address on behalf of the user (col. 11, lines 18-65)." However, the cited section of Holt describes the routing of a call to an appropriate network gateway. Through this, two possible methods exist as to how to assign the end-user a network address. The first, if no tunneling protocol is used, is for the NAS itself to assign the network address (see Holt, col. 11, lines 30-32 and FIG. 3B). The second, if a tunneling protocol is used, is to tunnel the IP address request to the NG (see Holt, col. 11, lines 36-65 and FIG. 3B). Both of these methods, however, are described as prior art in the background section of the present application. The only mechanism for the NAS to assign the network address that is known in the prior art is to preconfigure a block of network addresses in the NAS. This suffers the drawbacks described in the background section. Furthermore, the use of tunneling also suffers drawbacks, such as a lack of scalability, also discussed in the background section.

Claim 1 contains a limitation that indicates that the asking of the HGS for an IP address is "on behalf of the user". Thus, the first method described in Holt, wherein the NAS itself assigns the network address, clearly does not teach or suggest this limitation. Furthermore, the second method described in Holt, where tunneling is used, also does not teach or suggest the limitation. Applicant maintains that the mere tunneling of an IP address request is not "asking on behalf of the user" as the NAS is not performing the task of "asking", but rather merely forwarding a request. Claim 1 has been amended to include the limitation "without the use of a tunnel" to

make this distinction more clear. Applicant therefore maintains that claim 1 as amended is in condition for allowance.

Claims 21 and 26 as amended contain similar limitations and thus applicant maintains that claims 21 and 26 as amended are in condition for allowance.

Claims 2-20, 22-25, and 27-29 are dependent claims. The base claims being allowable, the dependent claims must also be allowable. Therefore, applicant maintains that claims 2-20, 22-25, and 27-29 are in condition for allowance.

In view of the foregoing, it is respectfully asserted that the claims are now in condition for allowance.


Request for Allowance

It is believed that this Amendment places the above-identified patent application into condition for allowance. Early favorable consideration of this Amendment is earnestly solicited.

If, in the opinion of the Examiner, an interview would expedite the prosecution of this application, the Examiner is invited to call the undersigned attorney at the number indicated below.

Respectfully submitted,
THELEN REID & PRIEST LLP

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ABSTRACT

A network access server (NAS) provides a connection to a user in a data communications network, where the NAS is capable of communicating with a home gateway server (HGS) maintaining a pool of IP addresses for allocation to authorized users associated with the NAS. The NAS includes a first memory for storing an identification of a user, a requester for asking the HGS for an IP address on behalf of the user; and a second memory associated with the first memory for storing the IP address of the user received from the HGS. The NAS may further include a detector for periodically detecting connection of the user to the NAS and a keep-alive sender for periodically informing the HGS that the user is still connected to the NAS, a receiver for receiving periodic queries from the HGS about the status of the user connection to the NAS and a responder responsive to the periodic queries for informing the HGS that the user is still connected to the NAS, and/or a receiver for receiving periodic signals from the user and a forwarder responsive to the receiver for forwarding information to the HGS that the user is still connected to the NAS. A home gateway server (HGS) provides mechanisms to assign an IP address to a user via a NAS, and to monitor the status of the IP address after assignment.

Version with Markings to Show Changes Made

1. (Once Amended) A network access server (NAS) providing a connection to a user in a data communications network, said NAS capable of communicating with a home gateway server (HGS) maintaining a pool of IP addresses for allocation to authorized users associated with the NAS, said NAS comprising:

a first memory location for storing an identification of a user;

an authenticator for asking the HGS for an IP address on behalf of the user, said asking occurring without the use of a tunnel; and

a second memory location associated with the first memory for storing the IP address of the user received from the HGS.

3. (Once Amended) The network access server of claim 1, further comprising:

a receiver for receiving periodic queries from the HGS about the status of the user connection to the NAS; and

a responder responsive to said periodic queries for informing the HGS that the user is still connected to the NAS.

21. (Once Amended) A method for providing an IP address to a user in a data communications network, the method comprising:

establishing a connection with a user;

receiving an identification and a request for an IP address from the user;

storing the identification in memory;

requesting the IP address from a home gateway server (HGS) on behalf of the user, said requesting occurring without the use of a tunnel;

receiving the IP address from a remote server;
storing the IP address in memory; and
transmitting the IP address to the user.

26. (Once Amended) A program storage device readable by a machine, tangibly embodying a program of instructions readable by the machine to perform a method for providing an IP address to a user in a data communications network, the method comprising:

establishing a connection with a user;
receiving an identification and a request for an IP address from the user;
storing the identification in memory;
requesting the IP address from a home gateway server (HGS) on behalf of the user, said requesting occurring without the use of a tunnel;
receiving the IP address from a remote server;
storing the IP address in memory; and
transmitting the IP address to the user.

27. (Once Amended) The program storage device [method] of claim 26, wherein the method further comprises[ing]:

detecting a continuing connection with the user; and
sending periodic keep-alive messages associated with the user to the remote server for as long as continued connection with the user is detected.

28. (Once Amended) The program storage device [method] of claim 26, wherein the method further comprises[ing]:

receiving periodic queries from the HGS about the status of the user connection; and
responding to said periodic queries that the user is still connected.

29. (Once Amended) The program storage device [method] of claim 26, wherein the method further comprises[ing]:

receiving periodic in-use signals from the user; and
responding to said periodic queries that the user is still connected.